

ILLUSTRATIONS AND RECORDS OF FISHES

By GILBERT P. WHITLEY

(Figures 1-13)

Miscellaneous fishes (mostly of little known, marine, tropical Indo-Pacific species) are described, recorded or figured here, sometimes with remarks on synonymy. The types and other specimens are in the Australian Museum, Sydney, except the blind eel which was kindly lent by the Director of the Western Australian Museum, Perth, to whom my grateful thanks are expressed. Thanks are also tendered to Miss Helen Ashton, my former assistant at the Australian Museum, for drawing most of the illustrations.

Family SYNBRANCHIDAE

Genus ANOMMATOPHASMA Mees, 1962.

ANOMMATOPHASMA CANDIDUM Mees.

(Figure 1.)

Anommatophasma candidum Mees, 1962, J. Roy. Soc. W. Austr. 45:27. *Id.* Cawthorn, 1963, W. Austr. Nat. 8:129.

Id. Whitley, 1964, Freshw. Fish Austr., ed. 2:39, fig.

Here figured from the paratype of the species (W. Austr. Mus. regd. no. P. 4918), kindly lent by the Director of the Western Australian Museum, Perth. A label with the specimen reads, in part, "Water in well 70°. Collected Eel at approx. 4.00 a.m. . . . Solitary specimen. As with previous specimen it went back under rock at sight ? of light and did not emerge until 1½ hours later."

This genus and species is known only from subterranean fresh waters of North-west Cape, Western Australia.

Family MURAENIDAE.

Genus LYCODONTIS McClelland, 1844.

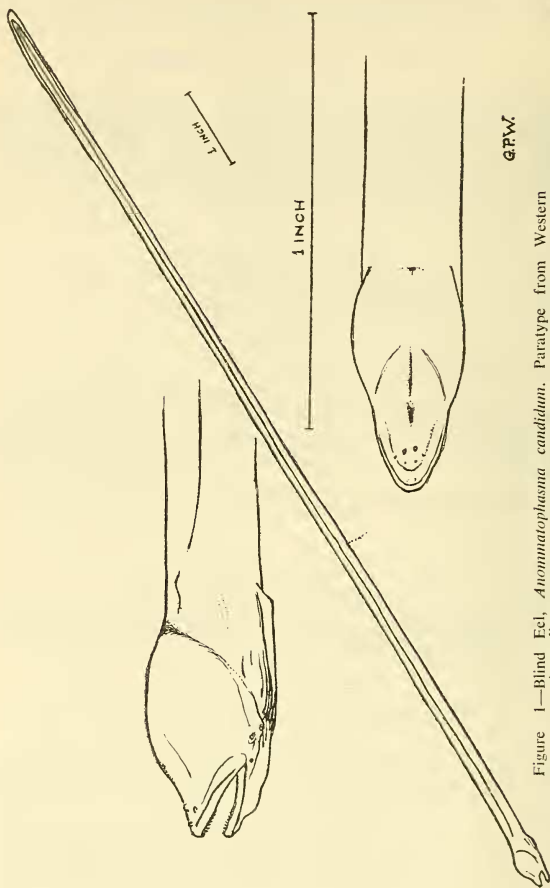
Lycodontis McClelland, 1844, Calcutta J. Nat. Hist. 5 (18):173. Type-species, *L. literata* McClelland, selected by Jordan & Evermann, 1896, Fish. N. & Middle America 1: 392.

LYCODONTIS SCRIPTUS (Bloch & Schneider).

(Figure 2.)

Gymnothorax scriptus Bloch & Schneider, 1801, Syst. Ichth: 529. *Id.* Richardson, 1843, Rept. 12th meeting Brit. Assn. Adv. Sci. 1842: 28. *Id.* McCulloch, 1929, Austr. Mus. Mem. 5: 72.

This species of reef eel was described in Latin from "Nova Hollandia" more than 160 years ago but has not hitherto been illustrated. Probably because of the vagueness of the type-locality, the species has been omitted from works on New South Wales fishes and even from Munro's Handbook of Australian Fishes, 1957. It is a rare eel, only a few isolated examples of which have been hooked in New South Wales, first in the eighteenth century (the 2ft. long type which probably came from Sydney or Botany Bay), thence as follows:-



G.P.W.

Figure 1—Blind Eel, *Anommatophasma candidum*. Paratype from Western Australia.

Australian Museum Reg. No.	Locality	Date and Captor	Head (mm.)	Depth (mm.)	Trunk (mm.)	Total length (mm.)
IB.3180	Berowra	June 1954 A. J. Whittman	53	20	180	430
IB.5731	Mouth of Hawkesbury River.	28/4/1962. H. Simister.	53	22	172	414
IB.5828	Coal and Candle Creek.	12/8/1962. A. B. Iverach.	52	19	182	375
IB.6349	Hawkesbury River.	Jan. 1963 Mr. King.	38	17	150	350

The last-named specimen is figured here.

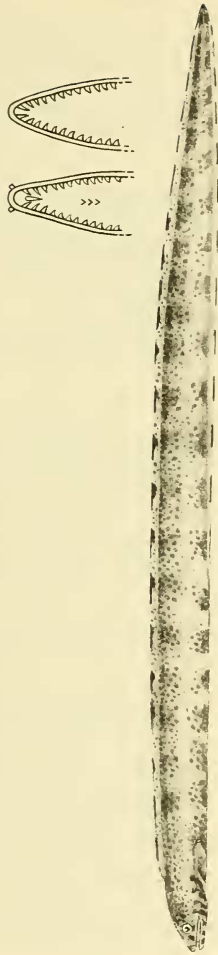


Figure 2.—Haan, *Lycodontis scriptus*. New South Wales. Inset: dentition.

The diagnostic characters of the species, which is most easily recognised by its characteristic colour-pattern, are as follows:-

Head 7.2 to 9.2 and depth 18.8 to 21.5 in total length. Head 3.2 to 3.9 in trunk. Anterior nostrils tubular, posterior ones orifices over front of eye. Lips not fimbriate. Teeth compressed, erect canines on jaws, about 12 or 13 on each side of each jaw. No mesial intermaxillary teeth. A row of small blunt molars on vomer posteriorly. Vent in anterior half of fish (preanal length 41.5 to 48% of total).

General ground-colour pale yellow or cream to dirty white below, densely mottled with greyish brown except along middle of belly. A series of seventeen to twenty-one large bruise-like brown marks along lower sides of head and body, becoming bands posteriorly on tail. Anteriorly, these marks are not bilaterally symmetrical and on the chin and sometimes on the belly they break up into smaller blotches. About seventeen to twenty-three blackish areas along the dorsal fin and eleven to fourteen on the anal fin continue from the body bands. Caudal partly cream and partly black. Throat-folds greyish-brown; eye pale blue. Gill-openings and corner of mouth pale. Nostrils yellow. Teeth white, with carmine axial streak.

Grows to 2 feet, according to Bloch & Schneider, who remarked that the aboriginal name for this eel was Haan.

Family ANTHIIDAE.

Genus HYPOPLECTRODES Gill, 1863.

- Hypoplectrodes* Gill, 1863, Proc. Acad. Nat. Sci. Philad., 1862: 236, footnote. Orthotype, *Plectropoma nigrorubrum* Cuvier & Valenciennes.
Id. Poey, 1871, Ann. N. York Lyc. Nat. Hist. 10: 45.
Id. Gill, 1896, Proc. U.S. Nat. Mus. 18:568.
Id. Ogilby, 1899, Proc. Linn. Soc. N.S.Wales 24:170.

This genus, which appears to have no synonyms, is distinguished from *Ellerkeldia* (*Gilbertia*, preocc.), its nearest ally, by having the lateral line formed of intercalated scales, each of which bears several tubules and has a convoluted edge.

HYPOPLECTRODES NIGRORUBER MACULATUS, subsp. nov.

(Figure 3.)

- Plectropoma nigrorubrum* Cuvier & Valenciennes, 1828, Hist. Nat. Poiss. 2:402. King George's Sound, Western Australia.
Id. Quoy & Gaimard, 1835, Voy. Astrolabe Zool. 3:659, pl. 4, fig. 1.
Id. Richardson, 1843, Rept. Brit. Assn. Adv. Sci. 1842: 17.
Id. Gunther, 1859, Cat. Fish. Brit. Mus. 1: 158.
Id. Castelnau, 1875, Res. Fish. Australia: 8 and Proc. Linn. Soc. N.S.Wales 3, 1879: 349.
Id. Klunzinger, 1879, Sitzungsber. Akad. Wiss. Wien 80:335.
Id. Macleay, 1881, Proc. Linn. Soc. N.S.Wales 5:322 and Descr. Cat. Fish. Aust. 1, 1881:22.
Id. Ogilby, 1885, Proc. Linn. Soc. N.S.Wales 10: 119 and Cat. Fish. N.S.Wales, 1886: 9, also Edib. Fish. N.S.Wales 1893:11 and Proc. Linn. Soc. N.S.Wales 24, 1899: 170.
Id. Woodward, 1902, W. Austr. Year Book 1900-01: 270.
Gilbertia nigrorubra Boulenger, 1895, Cat. Acanth. Fish. Brit. Mus. (2) 1:307 & 308.
Hypoplectrodes nigroruber Gill, 1896, Proc. U.S. Nat. Mus. 18: 568.
Id. Waite, 1921, Rec. S. Austr. Mus. 2:93, fig. 140 and 1923, Fish. S. Austr. : 116 & fig.

- Hypoplectrodes nigrorubrum* Waite, 1904, Mem. Nat. Club N.S.Wales: 28.
Id. Stead, 1906, Fish. Austr. 15 & 262.
Id. Stead, 1908, Edib. Fish. N.S.Wales : 59.
Id. McCulloch, 1921, Austr. Zool. 2(2) : 46, pl. 18, fig. 165a.
Id. McCulloch, 1929, Austr. Mus. Mem. 5: 154.
Id. T. Scott, 1962, Fish. S. Austr. : 227, fig.
Gilbertia nigrorubrum Zietz, 1909, Trans. Roy. Soc. S. Austr. 33: 269.
Hypoplectrodes nigrorubrum var. *maculatus* D. G. Stead, MS. label in Australian Museum.

Ogilby (1885) suggested the eastern Australian form of *nigrorubrum* might have to be raised to the rank of a local race or subspecies and D. G. Stead years later invented the manuscript name *Hypoplectrodes nigrorubrum* var. *maculatus* for a specimen from New South Wales. This, the holotype of the new subspecies, agrees with Ogilby's 1893 description in general but has the following special characteristics.

D.ix, 17; A.iii, 8; P.14. L.lat. 54. Tr. 4/1/22 to 4/1/6 on caudal peduncle.

Head (100 mm.) 2.75, length of caudal fin (43) 6.3, height of body (74) 3.7 in total length (275). Eye (18) 5.5 in head and 1.1 in snout (20). Interorbital (7) 2.5 in eye. Longest (third) dorsal spine (29) 3.7, second anal spine (20) 5, ventrals (48) 2, pectorals (67) 1.5 in head. Depth of caudal peduncle (26) 2.8 in that of body.

General characters as described by Ogilby (1893). Gill rakers 2 + 6, short, spatulate. Tongue acute, free.

Colour after long preservation, uniform yellowish-brown. Eye blue. A dark brown blotch, subequal to eye, on each side of body below arch of lateral line.

Described and figured from the holotype of the subspecies, a specimen 225 mm. in standard length or 275 mm. in total length (nearly 11 inches).

Loc.—Tuggerah, New South Wales, 1903, Mr. Gordon per D. G. Stead. Austr. Mus. regd. no. 1B.886.

A smaller paratype (no. I. 9953) from off Bondi, New South Wales, and an unregistered specimen with no data have similar coloration to the holotype.

Differs from the nominate species by having a dark blotch below the lateral line instead of five blackish sloping cross-bars on the body.

Family CHAETODONTIDAE

Genus CHAETODON Linne, 1758,

CHAETODON GUNTHERI Ahl.

(Figure 4)

Chaetodon guntheri Ahl., 1923, Archiv Naturges. 89 (A), 5:99.

Manado. *Id.* Weber & Beaufort, 1936, Fish. Indo-Austr.

Archip. 7:79, fig. 24.

Id. Smith, 1950, Sea Fishes S. Afr. : 239, fig. 604 and 1953, Mem. Mus. Castros. 2:9-10.

Id. Whitley, 1954, Proc. Roy. Zool. Soc. New South Wales 1952/53:23.

The specimen from a fish trap from 20 fathoms, 8 miles off Byron Bay, N.S.W. which I recorded from Australia (Austr. Mus. regd. no. 1B.2473) is here illustrated. The species is evidently rare. In alcohol, yellow with dark brown spots, ocular band and inframarginal borders to fins as figured.

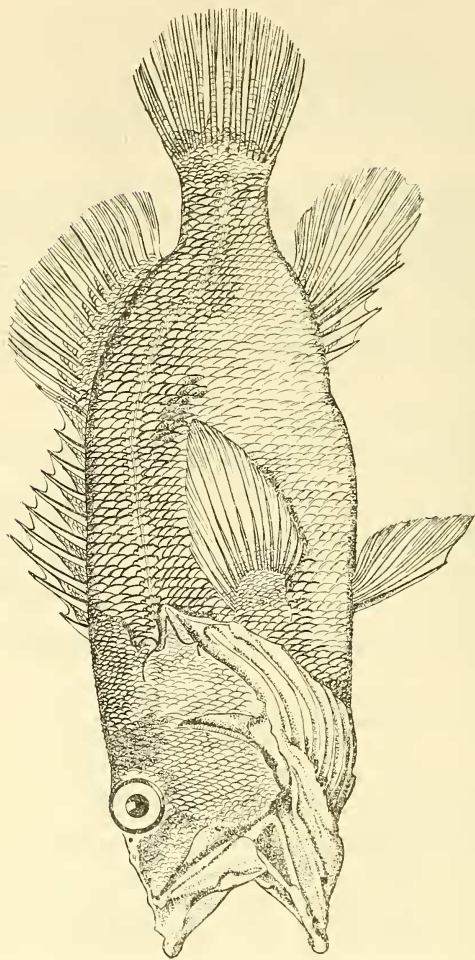


Figure 3.—Sea Perch, *Hypoplectrodes nigroruber maculatus*. Holotype of sub-species, New South Wales.

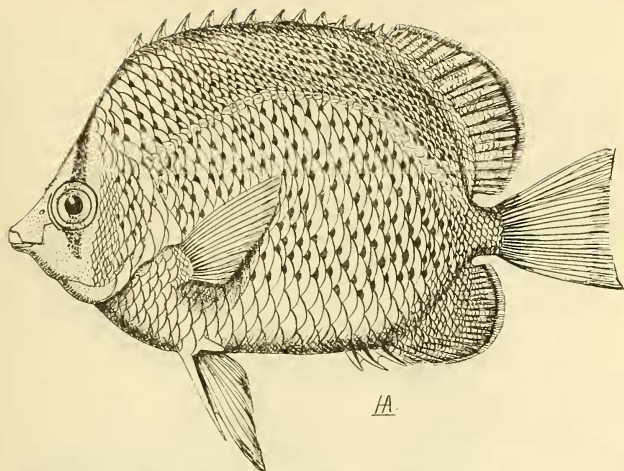


Figure 4—Butterfly Fish, *Chaetodon guntheri*. New South Wales.

Family POMACENTRIDAE

Genus POMACENTRUS Lacépède, 1802.

POMACENTRUS OBREPTUS Whitley.

(Figure 5)

Pomacentrus obreptus Whitley, 1948, Austr. Zool. 11:275.

Here figured from the holotype (Austr. Mus. regd. no. IB.1571) from the Monte Bello Islands, Western Australia.

Family CORIDAE.

Genus OCTOCYNODON Fowler, 1904.

OCTOCYNODON MINIATUS (Cuvier & Valenciennes).

(Figure 6)

Julis miniatus Cuvier & Valenciennes, 1838, Hist. Nat. Poiss. 13, "1839":460, ex Kuhl & van Hasselt, MS. Java.

Pseudojulis maculifer Castelnau, 1875, Res. Fish. Austr. (Vict. Offic. Rec. Philad. Exhib.): 35. Queensland.

A specimen, 52 mm. overall, identified as *Pseudojulis maculifer* many years ago in the Australian Museum (regd. no. I.449) from Cape York, Queensland, agrees with Castelnau's description except that the head goes 3 in standard length and the scales are fewer. It has D.ix, 11; A.iii, 11; L.lat. 28. Canines directed forwards. Thoracic scales not enlarged. Fins without scaly sheaths. Here illustrated.

It is evident that *Pseudojulis maculifer* is a new synonym of *Octocynodon miniatus*.

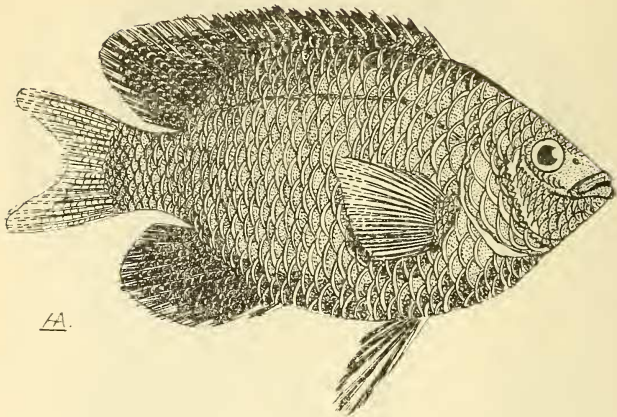


Figure 5—Demoiselle, *Pomacentrus obreptus*. Holotype, Western Australia.

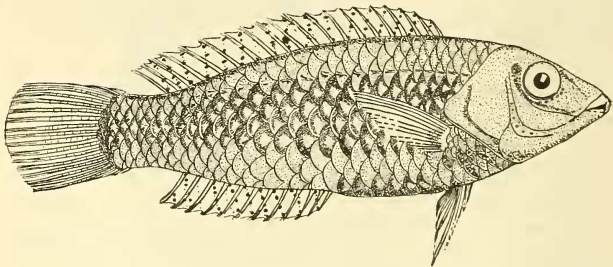


Figure 6—Wrasse, "*Pseudojulis maculifer*" = *Octocynodon miniatus*. Queensland.

Genus *HALICHOERES* Rüppell, 1835.

HALICHOERES NIGRESCENS (Bloch & Schneider).

(Figure 7)

Labrus nigrescens Bloch & Schneider, 1801, Syst. Ichth. : 263. No. locality (Indonesia.)

Halichoeres nigrescens Fowler & Bean, 1928, Bull. U.S. Nat. Mus. 100 (7):280 (q.v. for refs. & synon.) *Id.* Fowler, 1946, Proc. Acad. Nat. Sci. Philad. 98:166, fig. 33 and 1956, Quart. J. Taiwan Mus. 9:230, fig. 19 (young).

D. ix, 12; A. iii, 12; P.i., 15; L.lat. 27. Tr. 3/1/10 Pred. sc. 12.

Head (25 mm.) equals depth (25) 3.2 in standard length (79). Head naked. Two slightly enlarged non-flaring canines in each jaw anteriorly followed by about seven uniserial teeth. A strong posterior canine each side of upper jaw. Preopercle entire. Body compressed, scaly, scales of thorax not enlarged, those of predorsal areas smallest. Lateral line complete.

Dorsal spines slender, not divergent, regularly increasing in length to the fourth (8 mm.); membranes penicillate. Ventral spine long (8.5 mm.) and slender.

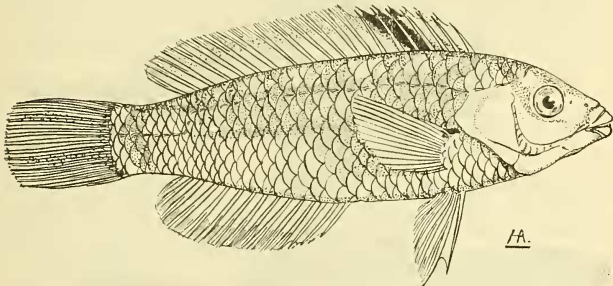


Figure 7—Wrasse, *Halichoeres nigrescens*. Queensland.

Colour after long preservation in alcohol, yellowish-brown with about seven indistinct broad darker brown cross-bars from back to middle of sides where each one is broken up by the intrusion of light centres to scales. A brown oblique bar from eye to before dorsal fin. A milky crescent around hinder and lower orbital rim. Eye greenish-yellow. Teeth whitish. A brown spot at pectoral axil. Fins all yellowish, a dusky brown wash near dorsal base anteriorly, followed by a blackish area on the fifth to seventh dorsal spines and thence continued as a dusky wash along outer half of soft dorsal fin. Anal similar to second dorsal. Other fins yellowish. No ocelli on soft dorsal fin or on caudal base.

Described and figured from a specimen 79 mm. in standard length or 3½ inches overall. Austr. Mus. regd. no. 1A.620.

Loc.—Holbourne Island, off Port Denison, Queensland. Mr. E. H. Rainford, 1921. New record for Australia.

Family URANOSCOPIDAE.

Genus URANOSCOPUS Linne, 1758.

URANOSCOPUS TERRAE—REGINAE Ogilby

(Figure 8)

Uranoscopus terrae-reginae Ogilby, 1910, New Fish. Qld. Coast:131. Trawled off south Queensland coastline. *Id.* McCulloch & Whitley, 1925, Mem. Qld. Mus. 8: 174. *Id.* Whitley, 1959, Proc. Roy. Zool. Soc. N. S. Wales 1957-58 : 23. *Id.* Mees, 1960, J. Roy. Soc. W. Austr. 43: 56-57.

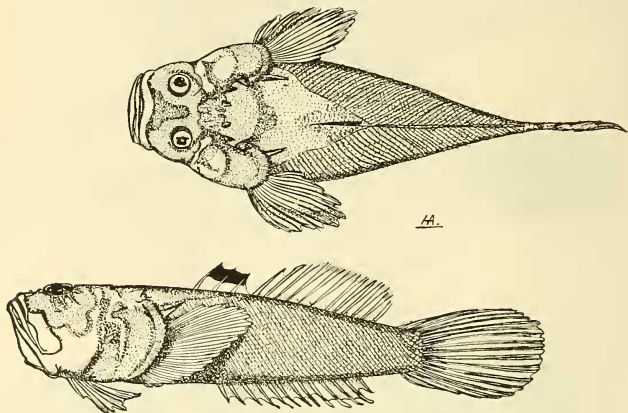


Figure 8—Stargazer, *Uranoscopus terraereginae*. Dorsal and lateral views of lectotype. Queensland.

Here illustrated from the lectotype, largest of a number of specimens trawled off the Queensland Coast. It is registered no. E.2764 and was trawled by F.I.V. "Endeavour", 4 to 20 miles N.E. of Gloucester Head, Queensland in 19 to 35 fathoms on 2nd August, 1910. Total length $7\frac{1}{2}$ inches (180 mm.) or 148 mm. in standard length.

Family SCORPAENIDAE

Genus SCORPAENOPSIS Heckel, 1837.

SCORPAENOPSIS PALMERI FURNEAUXI Whitley.

(Figure 9)

Scorpaenopsis palmeri furneauxi Whitley, 1959, Proc. Roy. Zool. Soc. N. S. Wales, 1957-58: 24. Off Pine Peak and Hayman Island, Queensland.

Figured from the holotype of the subspecies, the larger of two specimens (E.2896) trawled off Pine Peak, Queensland.

Genus IRACUNDUS Jordan & Evermann, 1903.

Iracundus Jordan & Evermann, 1903, Bull. U.S. Fish. Comm. 22, 1902: 210 *et ibid.*, 23, 1903 (1905): 470, fig. 207. Orthotype, *I. signifer* Jordan & Evermann from Honolulu. *Id.* Fowler, 1928, Mem. Bishop Mus. 10: 292 (references). *Id.* Gosline & Brock, 1960, Handbook Hawaiian Fishes: 286 & 341.

A little-known genus with only one species of which a few Hawaiian specimens are known; most authors copy Jordan & Evermann's account. I collected an example in the Cook Islands which differs in having one more pectoral ray, fewer scales, the maxillary reaching below posterior portion of eye, fewer dermal flaps, no large pores on lower jaw, and longest dorsal ray less than half head. In the type the pectoral rays are described as all simple but Jordan & Evermann's figure shows four divided rays as in my specimen which is described below as a new subspecies.

IRACUNDUS SIGNIFER RAROTONGAE, subsp. nov.

Br.6. D.xi, i, 10; A.iii, 5; P. 18 (2 + 4 branched + 12); V.i, 5; C. 11 branched rays. Sc. 39 above 1. lat. Tr.9/1/21. Predorsal sc.8. L.lat. with about 28 spine-bearing scales. Gill-rakers 6/4 + 6 rudiments on first branchial arch.

Head (37 mm.) 2.4, depth (26) 3.4 in standard length (90). Snout, 10 mm.; eye, 9; interorbital, 4; postorbital part of head, 19; first dorsal spine, 8; fourth (longest) dorsal spine, 22; longest (5th) dorsal ray, 15; second anal spine, 14; length of pectoral, 25, equal to that of caudal, 25; pectoral base, 11; maxillary, 20; depth of its distal extremity, 6.

No deep notch in profiles. No pit below eye. Most of head naked. Scales only on postorbital regions and opercles; including lower part of operculum. Maxillary reaching below posterior part of eye, truncate, smooth. A few small lappets over eye but no supraocular tentacle. Interorbital concave. Coronal ridges weak. Acute teeth in bands on jaws and vomer; none on palatines. They are largest on the posterior row near the symphyses and at each side of the vomer. One strong, sloping nasal spine each side. Preocular, supraocular and postocular spines present. No coronal or postfrontal spines. Tympanic, sphenotic, parietal, nuchal, pterotic, posttemporal, humeral, and postorbital spines present, all simple. Humeral spine without other spiny projections along its length. Suborbital ridge with three spines, the first two recumbent and only the third with salient tip. Two preorbital spines, the second not retrorse but pointing downward. Four, short preopercular spines and two long opercular ones diverging in a curved V. No barbels. Bones of head not cavernous, or with large muciferous cavities. Several large pores below suborbital stay. Pores below head very small. Gill-rakers low, spiny, clavate knobs.

Form rather slender, little compressed, back not humped. Cleithrum naked. Prepectoral region, breast and rest of body scaly. Scales imbricate, adherent, ctenoid, not extending over fins. Some small skinny flaps along l. lat. and sparsely scattered over head and body elsewhere. Lateral line complete, not modified posteriorly, its tubes simple and its course encroached upon by the body-scales.

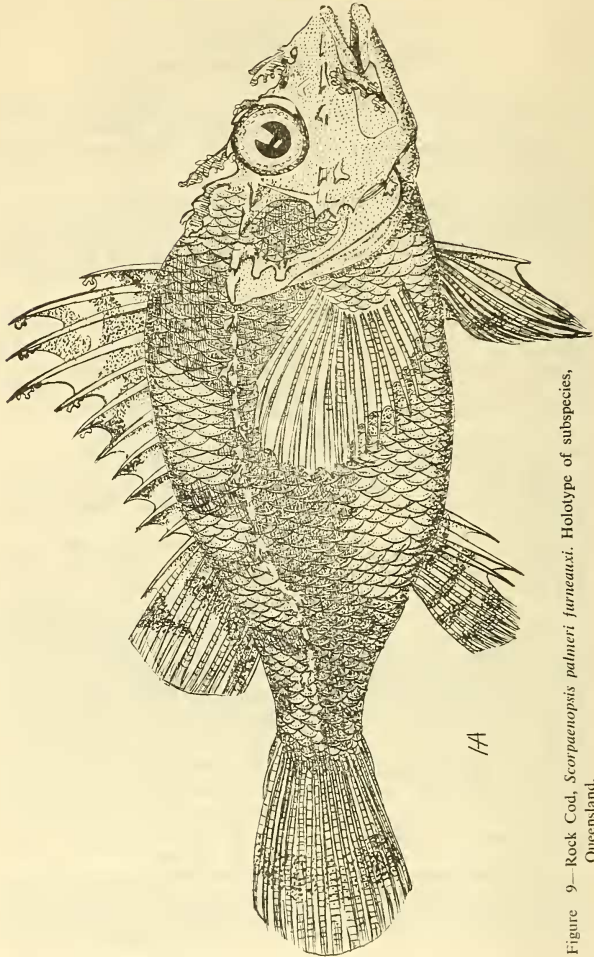


Figure 9—Rock Cod, *Scorpaenopsis palmeri furneauxi*. Holotype of subspecies, Queensland.

First dorsal fin beginning over opercular flap, with twelve spines, the fourth produced, membranes not deeply incised. A deep notch between the two dorsal fins. Second anal spine very strong, slightly longer than third. Anal origin below anterior dorsal rays. Third to sixth pectoral rays bifid; ninth ray longest; lowermost ray not detached as a feeler. A slight flap on inner base of pectoral. Ventrals rounded, not nearly reaching vent, which is inconspicuous, before anal fin. Caudal rounded.

Colour now faded to brownish-yellow without any conspicuous markings. Some small white spots on lower parts of head, front of back, and in pectoral axil. Eye beetroot red. A small black mark at base of first dorsal spine and a black blotch between second and third spines. Fins plain.

Described from the unique holotype of the subspecies, 90 mm. in standard length or $4\frac{1}{2}$ inches overall. Australian Museum regd. no. IA.5226.

Loc.—Rarotonga, Cook Islands, Pacific Ocean; collected on coral reef, October or November 1931, by Gilbert P. Whitley.

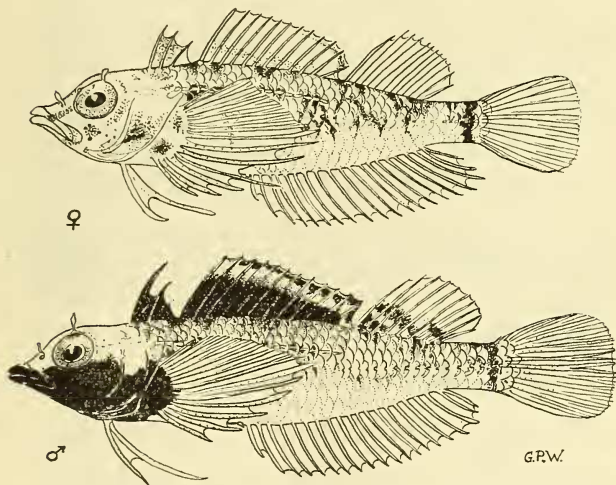


Figure 10—Threefin Blenny, *Vaucusella annulata*. Female, New South Wales.

Figure 11—Threefin Blenny, *Vaucusella annulata*. Male, New South Wales.

Family CLINIDAE.

Genus VAUCLUSELLA Whitley, 1931.

VAUCLUSELLA ANNULATA (Ramsay and Ogilby).

(Figures 10-11)

- ?*Tripterygium atrigulare* Gunther, 1873, J. Mus. Godef. 1 (4):91. Bowen, Queensland.
- Tripterygium* sp. Gunther, 1880, Rept. Zool. Challenger 1 (6): 28. *Id.* Ogilby, 1886, Fish. N. S. Wales: 39.
- Tripterygium annulatum* Ramsay & Ogilby, 1888, Proc. Linn. Soc. N. S. Wales (2) 2 (4) : 1021 & 1078. Vacluse, Port Jackson, N. S. Wales.
- Tripterygium rufopileum* Waite, 1904, Rec. Austr. Mus. 5: 182, pl. 24, fig. 4. Lord Howe Island.
- Tripterygium annulatum* Waite, 1904, Mem. Nat. Club. N. S. Wales : 52. *Id.* McCulloch, 1922, Austr. Zool. 2 (3) : 114, and of later authors and lists. *Id.* Ogilby, 1915, Mem. Qld. Mus. 3 : 136. *Id.* Fowler, 1957, Ichth. Notes 1 (3): 70. *Id.* Schultz and others, 1960, Bull. U.S. Nat. Mus. 202:293.
- Vauchusella annulata* Whitley, 1931, Austr. Zool. 6: 324 and 1935, Austr. Mus. Mag. 5: 292.

This opportunity is taken of presenting illustrations of a male (Austr. Mus. regd. no. IB.6862; total length, 46 mm.; standard length, 37.5 mm.) and a female (IB.6863; t.l. 41; s.l. 34) which I collected at Minnie Waters, northern New South Wales on 3rd November, 1963. The male has a black head, the body mostly crimson and with some black on the dorsal fins and as a band down the caudal base. The female is pink with irregular chequers of dark grey; the head is finely dotted, not black.

The types and many other specimens of the species show the following characters:

D. ii-iii/xii-xiii/10-11; last dorsal rays, whether 10th or 11th, always divided. A. 19-20, last two often close together. Third or fourth last anal ray longest. P. 15. C. 13. Sc. 32-34. Tr. 3-5/1/5. L.lat. 16-17 tubes and about 18 pierced scales. A few, low, poorly developed gill-rakers; very fine teeth on jaws.

Maxillary reaches nearer middle of eye in young than in adults; snout straight in young and concave in adults. Breast naked. Total length up to 2 inches.

Besides New South Wales, *annulata* is known from Southern Queensland and Lord Howe Island whence it has been named *Tripterygion rufopileum* Waite, a new synonym of *V. annulata*. It may eventually prove to be synonymous with the tropical Queensland *atrigulare* (*atrogularis* of authors), but the latter typically has fewer anal rays (14), and the posterior portion of the body is sometimes blackish.

Other species have still to be recorded from the Gulf of Carpentaria and Western Australia.

VAUCLUSELLA ACANTHOPS Whitley.

(Figure 12)

Vauchusella acanthops Whitley, 1964, Austr. Nat. 12 (4): 15. Heron Island, Queensland.

D. iii/xvii/8; A. ii, 19; P. 2+7 branched + 7 = 16; V.2; C.10 branched. L.lat. 16 tubes and about 21 notched scales. Sc. 36. Tr. 2 to 3 1/5 or 6.

Head (10 mm.) 3.4, depth (7) nearly 5 in standard length (34). Eye, 3 mm.; snout, 2; longest (tenth) pectoral ray, 13; depth of caudal peduncle, 3; predorsal length, 8; first dorsal spine, nearly 5; length of caudal fin, 9 mm.

Facies are figured: a slender fish with longer caudal fin than usual in the genus.

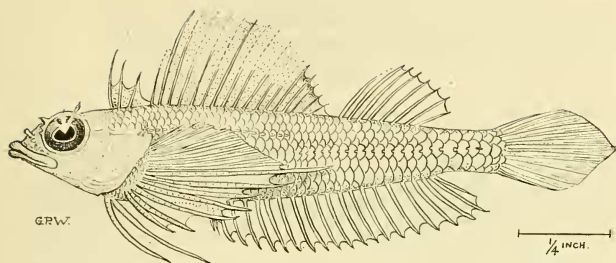


Figure 12—Threefin Blenny, *Vauclusella acanthops*. Holotype, Queensland.

Head naked except on nape, Snout steep and conic.

Maxilla reaching below middle of eye. Teeth small, conic.

Three conical spines over front of each eye. A supraorbital and a nasal tentacle. Interorbital narrow and concave between the raised, minutely denticulate orbital rims.

No predorsal scales.

Body, including breast, nape and pectoral base, with deciduous, imbricate, ctenoid scales.

Three dorsal fins, the second higher with 17 spines. Anal origin below seventh spine of second dorsal fin, its base ending well behind that of third dorsal. Two slender anal spines, close together, shorter than the rays, the last of which is divided to its base. Pectoral reaching below third dorsal fin. Membrane of ventral fin not evident. Caudal long, convex, subequal to head without snout.

Colour in preservative, plain greyish brown; no dark blotches. Spinous dorsal fins infuscated.

Described and figured from the holotype of the species, a specimen 42 mm. or 1 $\frac{5}{8}$ inches overall. Australian Museum registered no. IB.4016.

Five paratypes (Nos. IB.4023 and 4028) show no important variation. The ocular spines are just evident in a 34 mm. fish, the smallest specimen. The spines of the second dorsal fin vary from 16 to 17. A.ii, 19-20; P. 15-16; Sc. 34-37; L.lat. with 16 to 18 tubes. Tr. 2-3/1/5-7.

Loc.—Heron Island, Queensland; 1957. Presented by Mr. R. Slack-Smith who gave the holotype his field number 40/9/4. The paratypes, with same data, have field nos. 46/26/3 and H.98 Spec. C.

Readily distinguished from its congeners by its scaleless head, orbital spines, scaly breast, long caudal and pectoral fins, and 16 or 17 spines in the second dorsal fin.

Family SALARIIDAE.

Genus SALARIAS Cuvier, 1816.

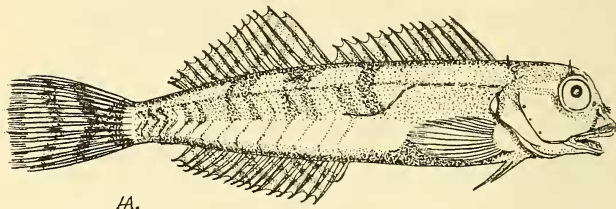
SALARIAS RAROTONGENSIS, sp. nov.

(Figure 13)

D.xii/15; A. 17; P. 14; V. 3. C. with 7 branched rays.

Head (10 mm.) 4.2, depth (7) 6 in standard length (42). Snout (4) 2.5 in head. Eye (3) 1.3 in snout and 3 times interorbital. Width of mouth (4.5) 2.2 in head.

Head much longer than wide. No nuchal crest. Eyes with a simple tentacle. A very small, simple nuchal tentacle, and a broader, fringed nasal one. Interorbital slightly concave. Maxillary reaches to below posterior part of eye. Both lips entire. Teeth very fine and numerous, flexible. A large canine



A.

Figure 13—Blenny, *Salarias rarotongensis*. Holotype from the Cook Islands.

on each side behind lower jaw. Gill-membrane with free fold across broad isthmus. Lateral line arched above pectoral, obsolete posteriorly. Depth of caudal peduncle equals eye.

Height of first dorsal fin less than that of second which is higher than anal. Dorsals notched to base. Last anal ray and last dorsal ray free from caudal peduncle.

Colour in alcohol pale grey to silvery grey. Vertex of head brown. A series of four paired bands along back, below and slightly behind which are paired brown chevrons along the sides. Scattered brown spots on shoulders and a few on sides of head. Chin slightly fuscous medially and with two indistinct oblique bands on each side of whitish median area. Fins yellowish. Dorsals with reddish-brown spotting. Pectoral not black-spotted, but infuscated towards tip. Caudal with brown marks, mostly on the rays, tending to form sloping cross-bars. Anal border dusky. Eye blue with silvery iris. Upper lip with five transverse dusky bars.

Described and figured from the unique holotype, 50 mm. or nearly 2 inches long. Austr. Mus. regd. no. IA.5358.

Loc.—Rarotonga, Cook Islands; G. P. Whitley, October or November 1931, on coral reef.

Distinguished by its coloration, minute teeth, entire lips, simple ocular and nuchal tentacles.

Family OSTRACIANTIDAE.

Genus ACANTHOSTRACION Bleeker, 1865.

Acanthostracion Bleeker, 1865, Atlas Ichth. 5: 28. Type-species, *Ostracion quadricornis* Linne, by original designation. *Id.* Bleeker, 1865, Ned. Tijdschr. Dierk. 2:301 *et ibid.*, 1866, 3: 5. *Id.* Breder & Clark, 1947, Bull. Amer. Mus. Nat. Hist. 88 (5): 299, pl. 14, text-fig. 4. *Id.* Smith, 1950, Sea Fishes S. Africa: 411, pl. 92, fig. 1173.

ACANTHOSTRACION BUCEPHALUS, sp. nov.

D.11; A.11; P.11; C.8. Sc.9. Tr.9.

Head (18mm.) 3.8, depth (37) 1.8 in standard length (69). Eye (9 mm.) 1.5 in snout (14). Pectoral fin at least 13 mm. long. Caudal peduncle long (15 mm. from end of carapace at sides to root of tail). Gill-opening (7 mm.), below posterior half of eye. Anterior profile very steep; cheeks deep. Interorbital very concave. Teeth brown, spaced, peg-like, few in each jaw. Nostrils near eyes.

A forwardly and outwardly directed spine just before each eye. Carapace closed behind the dorsal and anal fins and ending in a strong spine above and below. Caudal peduncle without bony plates except for a small round one below the spine behind the dorsal fin.

Dorsal ridge begins on interorbital and extends as a high, very convex crest to the dorsal fin. Lateral ridges obsolete; lateral line faint. Pelvic ridges well developed, extending from below cheeks to a spine behind the closure of the carapace behind the anal fin; they are armed with one strong, backwardly directed spine below the front of the dorsal fin. No median ventral ridge. Dorsal and anal fins higher than horizontal eye-diameter. Some pectoral and caudal rays branched.

Colour pale yellow to yellowish-brown. Ventral surface plain yellow except for few, faint, peripheral grey smudges. Lips, eyes, cheeks, sides and back of body, and caudal peduncle with large, spaced bluish-grey blotches, oval or of irregular shape. Fins mostly yellowish.

Described from the holotype, a dry specimen 69 mm. in standard length or 3½ inches overall.

Loc.—Cooktown district, Queensland. Presented by Mr. S. Kellner, 1963. Australian Museum regd. no. IB.6355.

Comes down to *Acanthostracion* in the key of Fraser-Brunner (1935, Ann. Mag. Nat. Hist. (10) 16: 317 and 320, fig. iv) and differs from the type-species of that genus in its remarkable curved and elevated dorsal ridge, without a prominent spine in the middle of the back, combined with the two ocular spines and the median spine at end of carapace above and below. This genus and its type-species appear to be very little known and one must delve in the earliest systematic works on ichthyology to elucidate relationships.

Ostracion tricornis and *quadricornis* Linne (1758, Syst. Nat., ed. 10: 331 and ed. 12, 1766: 408) are both based on Artedi's gen. 56, syn. 85, a boxfish from "India", *tricornis* having line-priority. Some of Artedi's species were based on boxfishes which he had seen in London taverns ("Vidi Londini in the White Bear" or "Vidi apud Sir Hans Sloane & in Naggshhead" and "Vidi Londini in the green Dragon in Stepney," for example) so the types, which may have been from the West Indies rather than "India", probably no longer exist. There is no similar species in Day's "Fishes of India."

The "*Piscis triangularis cornibus carens Clusy*" of Willughby (1686, Historia Piscium 4: 149 and appendix: 20, pl.I,13, fig.2) is similar but lacks the ocular spines. Willughby's "*Piscis triangularis cornutus, cuj media cauda cutacea aculeus perlongus erigitur*" (1686, *loc.cit.* (not in text), pl. I. 15) differs in lacking the long median posterior spines at the ends of the carapace; its erect flap of skin on the caudal peduncle may have been artificial or due to injury.

Genus OSTRACION Linne, 1758.

OSTRACION TUBERCULATUS Linne, 1758.

A young example, 1½ inches long (Austr. Mus. regd. no. IB. 893) from Gibbon Beach, Port Hacking, 4 July 1907 (Mr. F. Aldrich) had been given a new specific name by D. G. Stead in manuscript. There is no need to publish this name because the fish is evidently *tuberculatus* Linne, a tropical species which occasionally wanders into New South Wales although this is the first record of it from this State. It has the following characters:—

Snout not projecting. Sides flaring outwards below. Carapace four-angled, closed behind dorsal and anal fins. Back and belly convex. No dorsal ridge but one scale protrudes slightly before dorsal fin. Lateral ridge rounded, extends from eye to upper end of carapace. Pelvic ridge similar from below head to near lower end of carapace and extending well behind level of vent. No ventral or medio-lateral ridges. No preopercular or pelvic spines.

New record for New South Wales.
